

IN THE SPECIFICATION

Please amend the 3rd paragraph right after "Summary of Invention" on page 5 of the amended Specification filed in the Response dated 7/31/2004:

The present invention pertains to new designs of CMOS image sensors. According to one aspect of the present invention, the substrate traditionally used in the CMOS process is a same doping type of an EPI layer and replaced by a substrate that is of different doping type of the EPI layer, leading to layers on top of each other. When two different voltages are applied respectively to the ~~EPI layer and the substrate~~ two layers, ~~the substrate causes to form a~~ reversely biased junction is formed between the two layers so as to form a potential barrier under a photo diode. The potential barrier prevents noise electrons diffusing from ~~the a substrate layer (e.g., the lower one of the two layers)~~ to the photo diode. According to another aspect of the present invention, a deep well with the same type of the EPI layer is implanted in the EPI layer to prevent latch-up between wells and the substrate. According to still another aspect of the present invention, the distance between a micro lens and a corresponding photodiode is reduced by adding an extra CMP step after a last oxide layer deposition.